

# Bradley Kohler

MECHATRONICS ENGINEER · UNIVERSITY UNDERGRAD

Waterloo, ON, Canada

✉ bradleykohler96@gmail.com | 📷 studentbrad | 🌐 studentbrad

## Summary

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Mechatronics engineer at McMaster University. Software Developer in LINUX, C/C++, Python and Java. Microcontroller and Microprocessor software programmer for real life applications (MATLAB/Simulink, Labview, ARM Mbed, STM32, Nordic, Qualcomm Snapdragon). PCB hardware designer (Verilog HDL, NI Multisim, Eagle). Systems designer (Maplesim, AutoCAD, SolidWorks).

## Work Experience

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### Northern Digital Inc.

Waterloo, Ontario

ADVANCED RESEARCHER & FIRMWARE DEVELOPER

May 2018 - PRESENT

- Designed and programmed embedded C firmware for active tool tracking probe with sensor data fusion for 3DG system.
- Designed and implemented three sensor data fusion algorithms for 3D tracking systems including 3DG anise fusion, local attitude estimation and local gravity estimation.
- Developed Python libraries for sensor fusion visualization and statistical analysis.
- Developed C application for 3DG inertial data simulation.
- Developed embedded C sensor drivers for ARM processors using low level HAL with platforms Nordic, Snapdragon and STM32.
- Worked with embedded C libraries for signal generation and reception.

### McMaster University

Hamilton, Ontario

STUDENT RESEARCHER & TEACHING ASSISTANT

May 2017 - Sept. 2017

- Developed embedded C software for safety critical systems.
- Implemented pacemaker stateflow on MATLAB simulink which was uploaded to a custom prototype PCB.
- Produced software documentation for system design.

### Emnor Mechanical Inc.

Hamilton, Ontario

STUDENT EMPLOYEE & SOFTWARE DEVELOPER

May 2016 - Sept. 2016

- Developed inventory management software for large warehouses.
- Developed large SQL databases for thousands of orders and parts using Microsoft Access.
- Managed company payroll, invoices and purchase orders.

### McMaster University

Hamilton, Ontario

SOFTWARE ENGINEERING TEACHING ASSISTANT

May. 2015 - Dec. 2015

- Prepared lessons for students and presentations for laboratories.
- Graded student software laboratory test submissions.

### Emnor Mechanical Inc.

Hamilton, Ontario

MECHANICAL REPAIRMAN & SHOP EMPLOYEE

May 2015 - Sept. 2015

- Reverse engineered old damaged parts and produced CAD drawings using Faro Arm.
- Disassembled, repaired and reassembled centrifugal pumps.
- Maintained company shipping department and inventory.

## Education

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### McMaster University

Hamilton, Ontario

MECHATRONICS ENGINEERING CO-OP

Sept. 2014 - PRESENT

- Mechatronics IV
- McMaster Entrance Award Scholarship

### Galt Collegiate Institute

Cambridge, Ontario

SECONDARY SCHOOL GRADUATE

Sept. 2010 - June 2014

- 150th Anniversary Award Recipient
- Honors Student

## Extracurricular Activity

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## McMaster Canada-Israel Startup Competition

*Hamilton, Ontario*

STARTUP COMPETITION 1ST PLACE

*June, 2019*

- Winner of the 2019 McMaster Canada-Israel Startup Competition.
- Designed and programmed numerous technologies to accurately automate patient fluid intake.
- Traveled to Tel Aviv, Israel to present technologies to companies, universities and nursing homes.
- Presented technologies to Canadian companies, universities and nursing homes.

## Hack The North

*Waterloo, Ontario*

HACKATHON MENTOR

*Sept. 2018*

- Assisted Hackathon groups with embedded system problems.

## McMaster Sumobots

*Hamilton, Ontario*

CLUB MEMBER

*Jan. 2018 - April 2018*

- Gained experience working in a small group on embedded systems and embedded system IO.
- Worked with CAD software to develop controller casing.
- Competed against other groups in the final competition.

## Ronald McDonald House

*Hamilton, Ontario*

COMMUNITY HELPER

*Jan. 2017 - May 2018*

- Gained experience working with the community to help sick children indirectly.
- Assisted with cleaning the facility and baked desserts.